

AMENDMENTS TO THE CLAIMS

Claims 1-21 (CANCELED)

22. (Currently Amended) A dorsolumbar and lumbosacral vertebral fixation system, wherein the system consists of one or various connectors or couplings ~~[[111]]~~, a rod ~~[[112]]~~, a transversal traction device and means of vertebral fixation, with assembly carried out by the attaching the tail ~~[[114]]~~ of the vertebral element - coupling ~~[[111]]~~ - rod ~~[[112]]~~, the first assembly stage of the system being the introduction of the fixation elements, either to the pedicle or the vertebral laminae, a second stage of the insertion of the rod ~~[[112]]~~ through the connectors ~~[[111]]~~, and a third stage in which the connectors are connected to the tails ~~[[114]]~~ of the fixation elements by means of locknuts ~~[[120]]~~.

23. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]] 41~~, wherein the ~~connectors (111)~~ are at least one connector or coupling ~~is~~ made up of an annular body ~~[[121]]~~ and two clamp elements ~~(122) with the insertion of and~~ an open swivel ~~[[113]] inserted~~ inside the annular body ~~[[121]]~~.

24. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]] 23~~, wherein, with the two clamp ~~[[122]] elements~~ open in ~~[[its]] their~~ natural position, the open swivel ~~[[113]]~~ turns freely in ~~its housing, preferably with three degrees of freedom,~~ the annular body in a radius exterior to the open swivel ~~[[113]]~~ slightly

smaller than ~~[[the]]~~ an inside of the ~~ring (121) of the clamp~~ annular body, both being concentric radii.

25. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]]~~ 23, wherein the ~~open clamp (122) has~~ two clamp elements have a transversal circular orifice into which the tail ~~[[(114)]]~~ of the ~~fixation elements~~ device for vertebral fixation is inserted.

26. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]]~~ 23, wherein the ~~open clamp (122) has~~ two clamp elements have an adjustable transversal orifice ~~[[(123)]]~~ that allows for different tail ~~[[(114)]]~~ positions of the ~~vertebral fixation elements~~ device for vertebral fixation.

27. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]]~~ 23, wherein the open swivel ~~[[(113)]]~~ is hollow with a circular shape ~~[[(125)]]~~ through which the rod ~~[[(112)]]~~ passes.

28. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim ~~[[22]]~~ 23, wherein ~~[[the]]~~ an exterior surface of the open swivel ~~[[(113)]]~~ has a rough finish, which allows for better contact between surfaces when tightened.

29. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 23, wherein [[the]] a screw tightness of the tail [[(114)]] of the ~~vertebral fixation element~~ device for vertebral fixation on the two clamp [[(122)]] elements, closes [[the]] a body of the two clamp elements which, in turn, closes the open swivel ~~(113)~~ opening slot (124), thus tightening onto the previously oriented rod [[(112)]], fixing it in place.

30. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 41, wherein, ~~as a vertebral fixation element~~, an expansion screw [[(116)]] is used as the device for vertebral fixation, [[this]] the expansion screw being a hollow pedicle screw, smooth on the inside, through which a pin [[(128)]] is passed.

31. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 30, wherein [[the]] a screw head of the expansion screw has an interior thread in order to ~~house, threaded in, the Allen type screw of the~~ threadably receive a screw head [[(130)]] of the pin [[(128)]].

32. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 30, wherein the expansion screw ~~consists of lengthways~~ includes longitudinal slots (127), ~~which that~~ start towards [[the]] a middle ~~of its threaded length the~~ expansion screw, ~~and which are~~ the longitudinal slots being opened by fully inserting the pin [[(128)]].

33. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claims [[22]] 30, wherein [[the]] a diameter of [[the]] a lower third of the expansion screw [[(116)]], when the pin is fully inserted, progressively increases towards [[the]] an end of the expansion screw, until [[it]] the diameter reaches [[its]] a maximum at the [[tip]] end, between 20 and 30% when completely expanded.

34. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 30, wherein the expansion screw [[(116)]] is used in cases of osteoporosis vertebrae, reinterventions and for the sacral vertebrae, in order not to penetrate the anterior cortical layer.

35. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 30, wherein prior to the insertion of the expansion screw, [[(116)]] the bone is tapered to the same thread as [[the]] an external thread of the expansion screw.

36. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 30, wherein the expansion screw ~~(116) consists of a lengthways a~~ longitudinal interior hollow conduit, with an internal taper [[(129)]] towards [[the]] an end of the expansion screw, in such a way that when the pin is inserted [[(128)]], without ~~making-up~~ [[the]] a head [(130)] of the pin reaching the tail of the expansion screw, [[the]] a tip of [[this]] the pin reaches the ~~said inclined plane (129)~~ internal taper.

37. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 36, wherein, when the head [(130)] of the pin (128) ~~is made up on the~~ reaches the tail [(114)] of the expansion screw, [(116)] the tip of the pin [(128)] opens the internal taper [(129)] forcing [(the)] longitudinal slots [(127)] of the expansion screw [(126)] to open out, expanding the expansion screw against the sponginess of the vertebral body.

38. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 41, wherein, ~~as a fixation element~~ a laminar [(131)] hook [(115)] is used as the device for vertebral fixation, which couples the hook coupling onto the vertebral lamina by means of a hook finger, and the hook is screwed to the at least one coupling [(111)] at [(the)] a top thereof.

39. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 41, wherein, ~~as a vertebral fixation element~~ a pedicle [(132)] hook [(115)] is used as the device for vertebral fixation, which couples the pedicle hook coupling onto the pedicle of the vertebra by means of a concave shape on [(the)] a finger of the hook, and the hook is screwed to the at least one coupling [(111)] at [(the)] a top thereof.

40. (Currently Amended) The dorsolumbar and lumbosacral vertebral fixation system, as in claim [[22]] 41, wherein, ~~as a fixation element~~ an open tail [(118)] hook [(115)] is used as the device for vertebral fixation, as a top connection directly to the rod [(112)], the

open tail hook being closed and attached by means of a locknut [(120)] and a locking setscrew [(119)].

41. (New) A dorsolumbar and lumbosacral vertebral fixation system, comprising:

at least one connector or coupling;

a rod; and

a device for vertebral fixation,

wherein a tail of the device for vertebral fixation is attached to the at least one connector or coupling, and the at least one connector or coupling is attached to the rod,

a first assembly stage of the system is an introduction of the device for vertebral fixation to either the pedicle or the vertebral laminae,

a second assembly stage of the system is an insertion of the rod through the at least one connector or coupling, and

a third stage of the assembly includes connecting the at least one connector or coupling to the tail of the device for vertebral fixation.